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[54] SLING-TYPE EXERCISING DEVICE 4 Claims, 5 Drawing Figs.

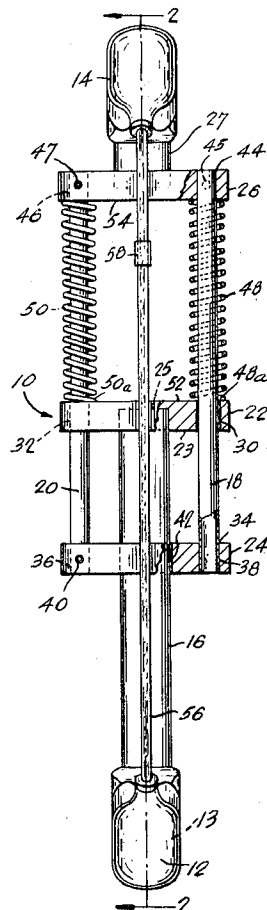
[52] U.S. Cl..... 272/83 R,
 272/82

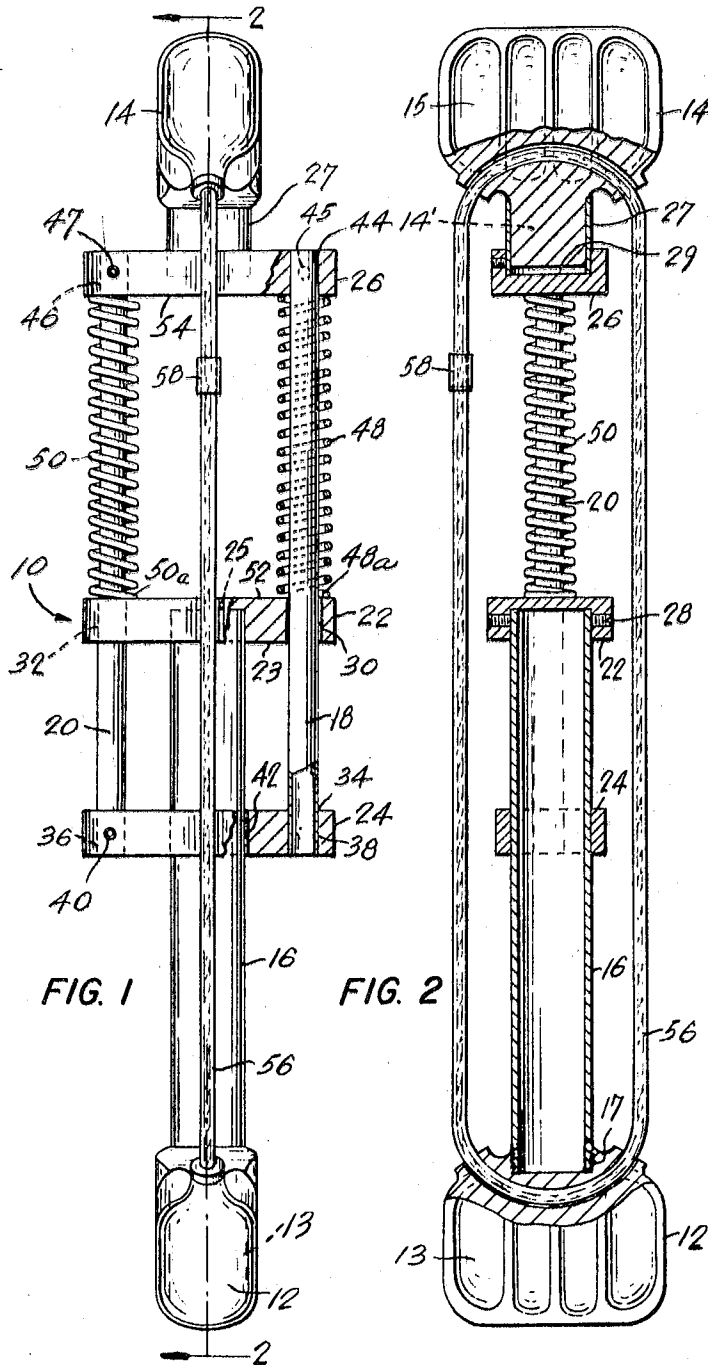
[51] Int. Cl..... A63b 21/00

[50] Field of Search..... 272/82, 83
 R, 79 R, DIG. 4, DIG. 5, 67, 80

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ABSTRACT: A physical exerciser including two handle pieces, a first tube having one end secured to one of the handle pieces and the other end fixedly received in a first bracket, and second and third tubes extending through bores provided in the first bracket and each having one of their ends connected to a second handle piece through a second bracket and opposite ends of the second and third tubes connected to a third bracket. Coiled springs may be disposed between the second and first brackets to oppose inward movements of the handle pieces. Rubber bands may be connected between the first bracket and the third bracket to resist inward movement of the handle pieces.





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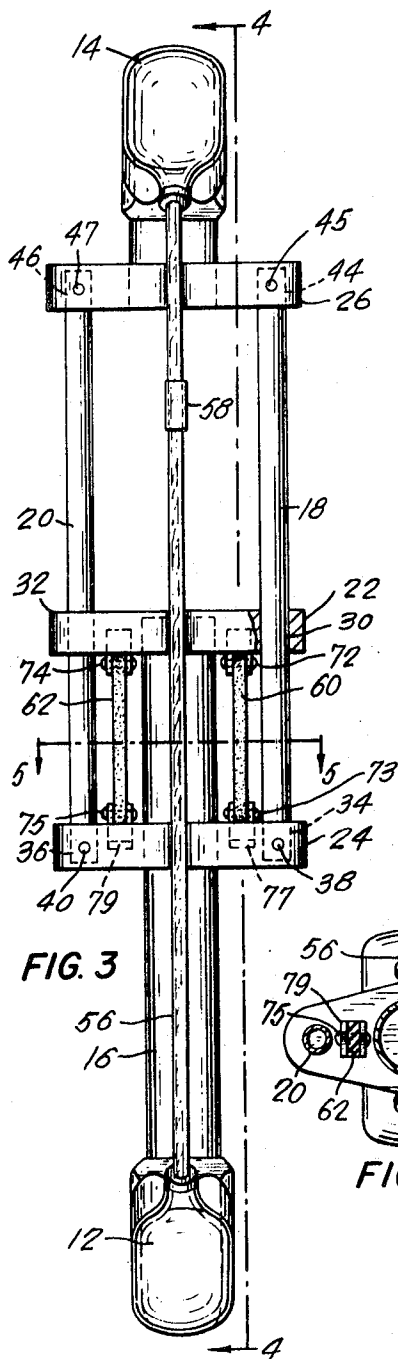


FIG. 3

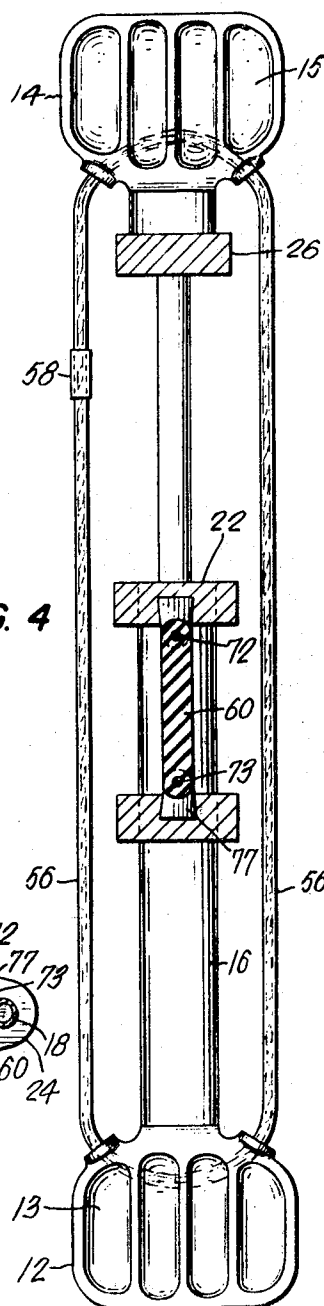


FIG. 4

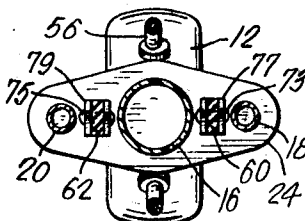


FIG. 5

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SLING-TYPE EXERCISING DEVICE

This invention relates to an exercising device and, more particularly, to a physical exerciser which is usable by compressing, pulling and expanding an elastic body mounted thereon for training and strengthening the muscular system of the user.

Conventional prior art exercisers consist, in most cases, of a coil spring being enclosed in two tubes, one of which is telescopically slidable within the other. Such an exerciser is disclosed in Canadian Pat. No. 689,069 issued June 23, 1964 to Gert F. Kolbel. One disadvantage of exercisers operating with a telescopic tube action is that during operation, parts which are located inside the tubes and the function of which is to ensure a proper sliding of the two tubes, often jam; these parts brake easily when force is exerted on the exerciser to disengage the jammed tubes. Another disadvantage is that repairs are expensive and time consuming since they can only be effected by dismantling the entire exerciser.

It is, accordingly, a general object of the present invention to provide an improved exercising device for training and strengthening the muscular system of a person by compressing, pulling and expanding an elastic body.

A more specific object of the present invention is to provide a physical exerciser in which the occurrence of jamming and breaking are substantially eliminated.

The present invention relates to an exercising device which comprises, in its broadest aspect, a first handle piece, a first strut member having one end connected to this first handle piece, first bracket means fixedly mounted at the other end of the first strut member, second and third strut members extending through bores provided in the first bracket means on opposite sides of the connection of the first strut member with the first bracket means, second bracket means fixedly receiving one of the opposite ends of each of the second and third strut members, the third bracket provided with a central bore to slidably receive the first strut member therein, a second handle piece connected to the other opposite end of each of the second and third strut members, and resilient means connected to and cooperating with the first bracket means to elastically oppose the displacement of the first bracket means with respect to the second bracket means when opposite forces are exerted on the two handle pieces.

In a first embodiment of the invention, the exercising is obtained by comprising two coil springs, each respectively provided around the second and third strut members.

In a second embodiment of the invention, the exercising is obtained by stretching a rubberlike material disposed between the first bracket means and the third bracket means.

Other advantages will become evident from the foregoing description of two embodiments of the present invention with reference to the accompanying drawings in which:

FIG. 1 is a front elevational view of one embodiment of the invention;

FIG. 2 is a cross-sectional side view taken along lines 2—2 of FIG. 1;

FIG. 3 is a front elevational view of another embodiment of the invention;

FIG. 4 is side elevational view taken along lines 4—4 of the exerciser shown in FIG. 3; and

FIG. 5 is a cross-sectional view taken along lines 5—5 of FIG. 3.

Referring to the drawings which illustrate two specific forms of the present invention, it is pointed out that like reference characters designate like or corresponding parts throughout and, except for the resilient means, the construction of the exerciser shown in FIGS. 1 and 2 is exactly the same as that of the exerciser shown in FIGS. 3—5; consequently, the description of the construction of the exerciser of FIGS. 3—5 will not be repeated except for its relationship with the specific construction of the resilient means of the second embodiment.

Generally, the exerciser 10 shown in FIGS. 1—5 includes two axially aligned handle pieces 12 and 14 interconnected by a framework made up of three elongated tubelike parallel strut members 16, 18 and 20 and of three parallel brackets means

22, 24 and 26 transversely disposed of the strut members. These strut members are preferably tubes made of light material having sufficient rigidity to resist pressure in the direction of their length. The first handle piece 12 is provided with finger-receiving grooves 13 on opposite sides thereof to facilitate the gripping thereof by the hand of the user; for similar reasons, the second handle piece 14 is provided with finger-receiving grooves 15 on opposite sides thereof. The first handle piece 12 is provided with a centrally disposed recess 17 to threadedly receive the lower end of tube 16; it is envisaged that the handle piece 12 can also be provided with a neck extension to which the lower end of tube 16 would be connected by means of bolts, rivets or the like. Fixed at the other end of tube 16 is a first bracket 22, one sidewall 23 of which has a centrally disposed recess adapted to receive the upper end 25 of tube 16. Bracket 22 and tube 16 are connected together by securing means 28, such as screws or the like. On opposite sides of the connection of the bracket 22 with the tube 16, bracket 22 is provided with two bores 30 and 32 through which tubes 18 and 20 are respectively slidable. The lower ends of tubes 18 and 20 are inserted in openings 34 and 36, respectively, provided in a second bracket 24 and are secured therein by means of rivets 38 and 40, respectively. Bracket 24 is provided with a center bore 42 to allow the free sliding of tube 16 therein. The other ends of tubes 18 and 20 are inserted in openings 44 and 46, respectively, provided in bracket 26 and are secured therein by means of rivets 45 and 47, respectively. The handle piece 14 has a neck portion 14' which is tightly secured to bracket 26 by means of a collar 27 riveted or otherwise fixed in recess 29 of the bracket 26.

Referring now more specifically to FIGS. 1 and 2, resilient means, such as compression springs 48 and 50 are respectively mounted around tubes 18 and 20; these springs have one end 48a, 50a resting against the top surface 52 of bracket 22 and the other end 48b, 50b resting against the lower surface 54 of bracket 26. An endless tensioning rope 56 extends through handle pieces 12 and 14 and is formed as an endless rope by joint 58. The stiffness of the compression springs 48 and 50 is predetermined so that they may be compressed by a person with sufficient difficulty so that the muscular system may be developed as a result from repeated compressings thereof.

To carry out physical exercises, the two handle pieces 12 and 14 must be moved one toward the other: this may be accomplished by a person grasping the handle pieces and compressing coil springs 48 and 50 or grasping rope 56 at mid-tracks and pulling them apart, thereby compressing also springs 48 and 50. In so doing, bracket 22 is displaced relatively to bracket 24 and springs 48 and 50 tend to elastically oppose this displacement and to return the two brackets one toward the other when forces are no longer exerted on the handle pieces.

Similar exercises may be obtained from the exerciser illustrated in FIGS. 3 to 5, where the construction is identical to the exerciser of FIGS. 1 and 2 except for the construction of the resilient means. Comparing FIG. 1 to FIG. 3, springs 48 and 50 which act against brackets 22 and 26 are replaced by two strips 60 and 62 of rubberlike material connected between brackets 22 and 24. These strips are fixed to the brackets by means of bolts 72, 73, 74 and 75 to clamps 76, 77, 78 and 79 which are partially embedded in brackets 22 and 24. In this embodiment, the exercise is effected in the same manner as that of the structure of FIGS. 1 and 2 by pushing on the two handle pieces 12 and 14 or by pulling rope 56 apart; however, in the present case, the exercises is obtained by exerting a tensile stress on the rubber material; this is accomplished when bracket 22 is distanced away from bracket 24 upon actuation of opposite forces on the handle pieces. Again the stiffness of the rubber material should be carefully chosen so that beneficial results may be obtained by repeated stretchings thereof. Two strips of rubber material have been found to be the preferred construction of the resilient means; however, it can be easily foreseen that one or more than two strips of rubber could be used to perform the same function of strips 60 and 62.

Although the invention has been discussed above only in relation to two specific forms of the invention, persons skilled in the art will be aware that it may be refined and modified in various ways without departing from its scope. It is therefore wished to have it understood that this invention is not limited in interpretation except by the terms of the following claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An exercising device comprising a first handle piece; a first rigid strut member having one end secured to the first handle piece; first bracket means fixedly mounted at the other end of said first strut member; second and third rigid strut members extending slidably through bores provided in said first bracket means and positioned on opposite sides of the connection of said one end of said first strut member with said first bracket means; and said second and third strut members being slidably connected to the first rigid strut member between the first bracket means and the first handle piece; third bracket means fixedly receiving one end of each of the second and third strut members, second bracket means having a central bore to slidably receive said first strut member therein; said third bracket fixedly receiving the opposite end of each of the second and third rigid strut members; a second handle piece; and resilient means connected to and cooperat-

ing with said first bracket means to elastically oppose the displacement of said first bracket means relative to said third bracket means when opposite forces are exerted on said handle pieces.

2. An exercising device as defined in claim 1, wherein said first, second and third strut members are tubular shaped, wherein said second handle piece is fixedly mounted to the second bracket means, the opposite ends of said second and third strut members being fixed to said third bracket means, and an endless rope extending through each of the handle pieces.

3. An exercising device as defined in claim 2, wherein said resilient means consist of a pair of compression springs, each spring being mounted about each of said second and third strut members between said first and second bracket means, the exercising being obtained by compressing said compression springs.

4. An exercising device as defined in claim 2, wherein said resilient means consist of a pair of strips of rubber material, each strip having one end connected to said first bracket means and the other end to said third bracket means, the exercising being obtained by stretching said strips of rubber material.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,633,908 Dated January 11, 1972

Inventor(s) Adolf W. Krauth

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In Claim 1:

line 19, delete "third", and insert "second"

line 20, delete after the comma "second" and insert "third"

Signed and sealed this 15th day of August 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents